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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,920	03/30/2004	Hongyong Zhang	07977-103003	3167
26171	7590	08/10/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			QI, ZHI QIANG	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/811,920	Applicant(s) ZHANG, HONGYONG	
	Examiner Mike Qi	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-33 and 41-50 is/are pending in the application.
- 4a) Of the above claim(s) 34-40 and 51-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-33 and 41-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/768,066.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims: Therefore, the “a conductive layer interposed between the portion of the sealing member and the first substrate” (that is a cross-sectional view taken along a line B-B' in Fig.7; and the Fig.5 does not show the conductive layer 401 interposed between the sealing member and the first substrate) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 2871

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The claims 24-33 and 41-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 24, 29, 41 and 46, recitation “. . .said conductive layer continuously extends along said edge of said first substrate for more than a pitch of said second lines (should be the second conductive lines such as data signal lines).” and “. . . said conductive layer continuously extends along said edge of said first substrate for more than a pitch of adjacent ones of said scanning lines” that is not clear and indefinite as how the conductive layer extends and what the parameter compare with the pitch of the second lines. The pitch should be the adjacent second conductive lines or the adjacent scanning lines. The claim written cannot tell how the conductive extends and how to compare the conductive layer with the pitch of the adjacent conductive lines, so that such features are not searchable and are not examinable.

Claims 25-28 are dependent on the claim 24; claims 30-33 are dependent on the claim 29; claims 42-45 are dependent on the claim 41; claims 47-50 are dependent on the claim 46. Therefore, all the dependent claims have the deficiency set forth above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 24, 27, 29, 32, 41, 44, 46 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of US 5,619,358 (Tanaka et al).

Claims 24, 29, 41 and 46, AAPA (paragraphs 0004 – 0014; Fig. 17) that a display device comprising:

- first substrate (element substrate 11) having side edges;
- first conductive lines (scanning lines 16) over the first substrate (11) in a first direction (X direction);
- second conductive lines (signal lines 15) over the first substrate (11) in a second direction (Y direction);
- using interlayer insulating film for separating the scanning line and the signal line, i.e., an interlayer insulating film disposed between the first conductive lines and the second conductive lines;

Art Unit: 2871

- using TFT to control the liquid crystal display that is connected to the signal line and scanning line, and that is disposed at location adjacent to intersection of the first conductive lines and the second conductive lines;
- the liquid crystal material is interposed between the two substrates, so that the second substrate located separated from the first substrate (11);
- sealing member (17) disposed at a periphery of the first and second substrates, and the sealing member (17) having a portion adjacent to the side edge;

(concerning claims 41 and 46)

- driver circuit (signal line drive circuit 13 and scanning line drive circuit 14 that must have thin film transistors) formed over the first substrate (11) and disposed within a region surrounded by the sealing member (17).

AAPA does not explicitly disclose that a conductive layer comprising a same material as the second lines (should be second conductive lines such as data signal lines) or a same material as the scanning lines, and interposed between the portion of the sealing member and the first substrate.

Tanaka discloses (col.9, line 46 – col.12, line 51; Figs. 1 and 8) that using dummy electrodes (27a,27b) comprising conductive films (25, 26) interposed between the portion of the sealing member (29) and the substrate (21); and using dummy electrodes (38a, 38b) comprising conductive films (36,37) interposed between the portion of the sealing member (39) and the substrate (32). Tanaka also discloses (col.11, lines 18 – 35; Fig. 1) that the conductive film (25) connected to the signal

Art Unit: 2871

electrode (23) (the signal electrode must be connected to the signal line) or scanning electrode (24) (the scanning electrode must be connected to the scanning line), and conductive film (26) is not connected to the signal electrodes or scanning electrodes; and the conductive film (26) is formed at same layer as the conductive film (25) (see Fig.1). Tanaka indicates (col. 4, lines 58 – 60) that each substrate member includes dummy electrode (conductive layer) on the liquid crystal side (between the substrate and the sealing member) to keep the thickness of the liquid crystal layer uniform.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the display device of AAPA with using conductive film formed between the substrate and the sealing member and use same material as the signal lines or scanning lines as taught by Tanaka for keeping the thickness of the liquid crystal layer uniform (see col.4, lines 58-60).

Claims 27, 32, 44 and 49, lacking limitation is such that the conductive layer is electrically isolated from the first conductive lines (such as the scanning lines) or the second conductive lines (such as data signal lines).

Tanaka discloses (col.11, lines 29-35; Fig.1) that the conductive film (26) is isolated from conductive lines (not electrically connected to signal lines), so as to prevent the corrosion invading into the electrodes.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the display device of AAPA with the conductive layer electrically isolated from the scanning lines or the data signal lines as taught by Tanaka for preventing the corrosion of the electrodes (see col.11, lines 29-35).

Art Unit: 2871

6. Claims 25, 30, 42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Tanaka as applied to claims 24, 27, 29, 32, 41,44, 46 and 49 above, and further in view of US 5,429,962 (Yang).

Claims 25, 30, 42 and 47, lacking limitation is such that the thin film transistor is a top-gate type thin film transistor.

Yang indicates (col.1, lines 36 – 38) that the top-gate type TFT is a conventional switching element structure. Yang indicates (col.4, lines 33 – 36) that the top-gate type liquid crystal display shows advantages such as the reduction of contact resistance and facile control of the contact resistance.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the display device e of AAPA and Tanaka with using top-gate type thin film transistor in the display device as taught by Yang for achieving the advantages such as the reduction of contact resistance and facile control of the contact resistance, since top gate would shield the semiconductor layer from light and the TFT would be operated stable.

7. Claims 26, 31, 43 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Tanaka as applied to claims 24, 27, 29, 32, 41,44, 46 and 49 above, and further in view of US 5,508,532 (Teramoto).

Claims 26, 31, 43 and 48, lacking limitation is such that each channel region of each of the thin film transistors has a crystalline structure.

Teramoto discloses (col.1, lines 21-23) that it is desirable to utilize a crystalline silicon film as an active layer of the TFT so as to obtain excellent operating characteristics.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the display device of AAPA and Tanaka with the channel region of the TFTs having a crystalline structure as taught by Taramoto for obtaining a excellent operating characteristics.

8. Claims 28, 33, 45 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Tanaka as applied to claims 24, 27, 29, 32, 41,44, 46 and 49 above, and further in view of US 5,162,901 (Shimada et al).

Claims 28, 33, 45 and 50, lacking limitation is such that the conductive layer extends in a form of a rectangular wave.

Shimada discloses (col.9, lines 25 – 54; Fig.7) that the conductive film extending form such as the added capacitance electrode wire (2) (conductive layer) having a rectangular wave shape for the extending, and such extending form would increase the contact area to the other layer such as the wire (6) with no breaks. Therefore, such extending form used in the conductive layer of this application would be an obvious variation for increasing the contact area and the layers contact stress, and more easier to keep the cell gap uniform.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the display device of AAPA and Tanaka with the conductive layer extended in a form of a rectangular wave as Taught by Shimada for

Art Unit: 2871

increasing the contact area and layers contact stress, since the rectangular wave pattern of the conductive layer would be easier to keep the cell gap uniform.

Response to Arguments

9. Applicant's arguments filed on May 12, 2005 have been fully considered but they are not persuasive.

1) The amended claims cannot tell how the conductive extends and how to compare the conductive layer with the pitch of the adjacent conductive lines.

2) The conductive layer (401) interposed between the sealing member and the first substrate does not show in the drawings (that is the cross-sectional view taken along a line B-B' in Fig.7 ; and the Fig.5 does not show the conductive layer (401) interposed between the sealing member and the first substrate).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2871

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

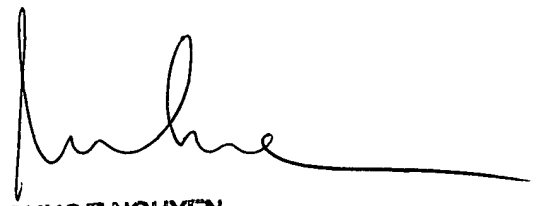
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi
July 16, 2005



DUNG T. NGUYEN
PRIMARY EXAMINER